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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,160	02/21/2002	Yong-Gyun Jung	1455-020220	1890

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EXAMINER

SERGEANT, RABON A

ART UNIT PAPER NUMBER

1711

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/069,160

Applicant(s)

JUNG ET AL.

Examiner

Rabon Sergent

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on January 30, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

1. Claims 2, 6, and 12-20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicants have failed to specify the type of molecular weight for the polyethylene wax. It is unclear if the molecular weight is weight average or number average. Such information is necessary for properly identifying the component. Applicants have cited no evidence to support their argument that low value molecular weights preclude molecular weight types other than number average molecular weights.

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have failed to provide support for the amendment to the claims specifying that the molecular weights for the polyester and polyurethane are number average molecular weights. Applicants' argument that one would know that the molecular weights are number average molecular weights in view of their low value is insufficient to provide support for the amendment. Applicants have provided no evidence to support this position. Furthermore, the claimed molecular weight of 30,000-100,000 for the chain extended prepolymer cannot be argued to be of low value.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear how the specified amount corresponds to the differently specified quantity within claim 2. Applicants have failed to address this rejection.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3-5, and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blum et al. ('707) in view of Wilmes et al. ('106).

Blum et al. disclose aqueous polyurethane dispersions, suitable for use as metal coatings, comprising a curing agent, such as a blocked isocyanate component, and a hydroxyl containing

polyurethane derived from the reaction of a polyester polyol, having a molecular weight of 500 to 4,000; a polyisocyanate; a dihydroxy carboxylic acid, to provide hydrophilic groups; a chain extender; a neutralizing agent, such as an amine; and a solvent component to aid in the dispersing step. See abstract and columns 2-8. Patentees further disclose quantities of the reactants that meet applicants' claims.

6. Blum et al. differs from the instant process in that patentees fail to disclose the instantly claimed step of chain extending the prepolymer by reaction with a polyamine after the prepolymer has been dispersed within water. Though Blum et al. fail to disclose such a step, the introduction of the amine chain extender into the dispersion water to control or regulate the exothermic reaction was known at the time of invention. See column 6, lines 32-36 within Wilmes et al. The position is taken that applicants' claimed chain extending step is equivalent to that disclosed by the secondary reference, because chain extension will only occur once the prepolymer is dispersed. Therefore, in order to control the chain extension reaction and in order to prevent the undesired steps necessary to disperse a viscous, chain extended prepolymer (namely, the addition of solvent and the use of energy intensive mixing operations), the position is taken that it would have been obvious to modify the process of Blum et al. by chain extending the prepolymer after the dispersion step.

7. Claims 2, 6, and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohri et al. ('575) in view of Blum et al. ('707) and Wilmes et al. ('106).

Mohri et al. disclose the coating of a zinc plated steel plate having a chromate coating with a lubricating resin for improving formability and corrosion resistance, wherein the

lubricating resin composition comprises a hydroxyl or carboxyl group containing resin component, such as a urethane; a silica component; a silane coupling agent; and a lubricant. Patentees further disclose that it is advantageous to blend a high temperature melting lubricant, such as a fluororesin, with a low temperature melting polyethylene wax lubricant. See abstract and columns 7-11.

8. Though Mohri et al. disclose that urethane resins may be employed as the resin component, patentees fail to recite the use of polyurethane aqueous dispersions as the resin component. However, the use of aqueous polyurethane dispersions as binding components for metal coatings was known at the time of invention. This position is supported by the teachings of Blum et al. See paragraph 5 for a discussion of Blum et al. Furthermore, as aforementioned within paragraph 6, though Blum et al. fail to disclose the claimed chain extension step, the chain extension of polyurethane prepolymers after dispersion was known at the time of invention as a means of controlling or regulating the reaction of the chain extender with the prepolymer. See column 6, lines 32-36 of Wilmes et al. Therefore, in view of the fact that organic solvent containing compositions were known to be detrimental to the environment at the time of invention and since the primary reference discloses that hydroxyl or carboxyl group containing urethane resins are useful components for producing the lubricant composition, the position is taken that it would have been obvious to incorporate the hydroxyl or carboxyl group containing aqueous polyurethane dispersion of Blum et al. into the lubricant composition of Mohri et al., so as to obtain a more environmentally friendly metal coating composition and process for coating zinc plated steel having a chromate coating. The position is further taken that it would have been

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obvious to chain extend the prepolymer after dispersion, so as to control exothermic conditions and prevent viscosity build-up of the undispersed prepolymer. The prevention of viscosity increase within the prepolymer would have been beneficial, so as to preclude the use of solvents and energy intensive mixing operations to disperse the polyurethane within water.

9. Applicants' response of January 30, 2004 has been considered, and the prior art rejections have been modified accordingly.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

  
RABON SERGENT  
PRIMARY EXAMINER

R. Sergent

June 12, 2004